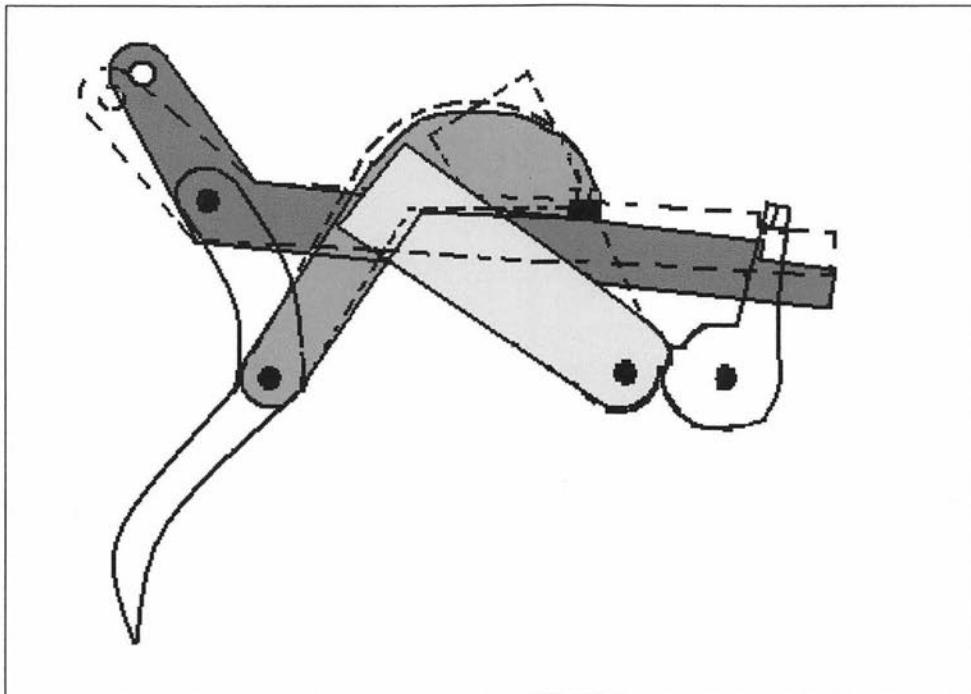
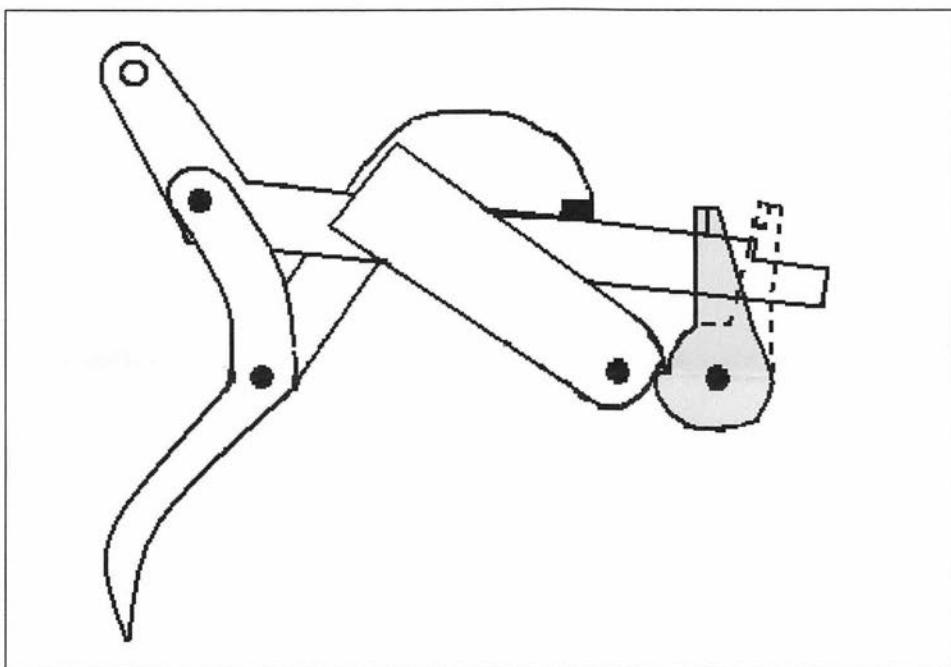


# **VOLUME 8**



**Figure 5 - Generic Semi-Automatic Trigger, Hammer Back, Disconnector Pushing Trigger Bar**

Figure 6 shows the sear after being disengaged from the trigger bar engaging the hammer to hold it in the cocked position.



**Figure 6 – Generic Semi-Automatic Trigger, Sear Engaging Hammer In Cocked Position**

Figure 7 shows the disconnector moving back up as the bolt moves to the closed position. When the trigger is released, it moves forward, and the trigger bar notch then engages the sear and the trigger is once again ready to discharge the firearm.

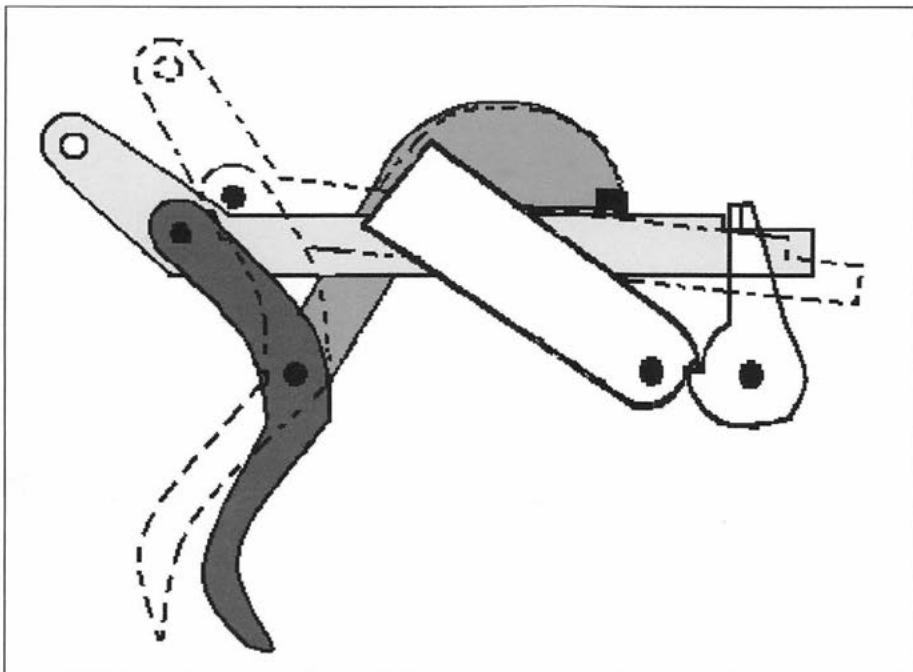


Figure 7 – Generic Semi-Automatic, Trigger released, Trigger Bar Reset

Figure 8 shows the incremental trigger assembly. It is very similar to the generic semi-automatic trigger assembly previously discussed. The trigger bar has multiple notches on both edges, the sear has a second arm, and there is the addition of a trigger bar stop and a trigger stop.

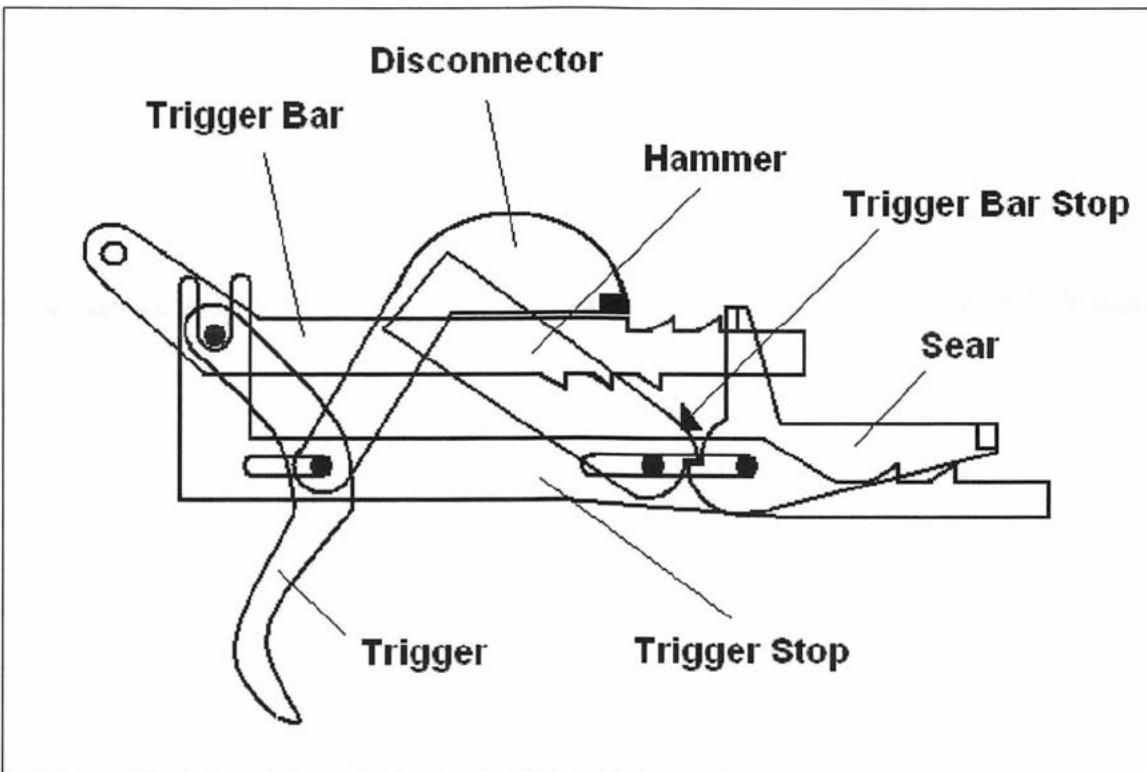


Figure 8 – Incremental Trigger

The incremental trigger functions as follows. When the trigger is pulled trigger bar rotates the sear forward in the same manner as the generic semi-automatic trigger, as shown in Figure 9. Additionally the second arm on the sear moves down and the trigger stop also moves forward. When the sear rotates far enough forward it will release the hammer but at the same time, a lug on the sears second arm will move into position in front of a notch on the trigger stop, stopping any further backward motion of the trigger.

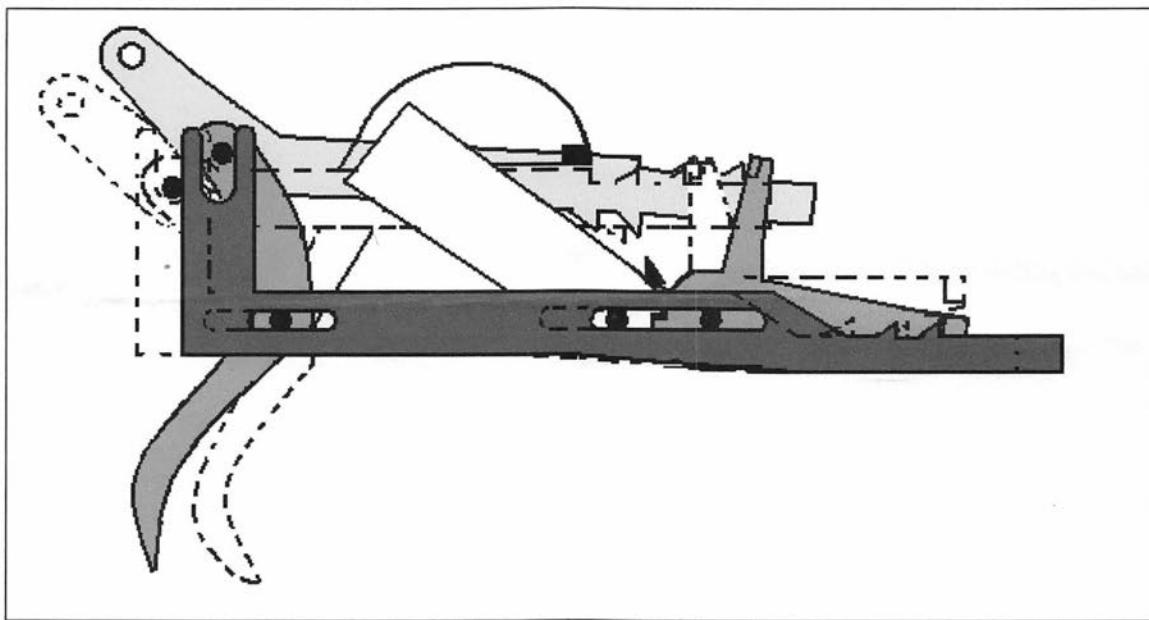
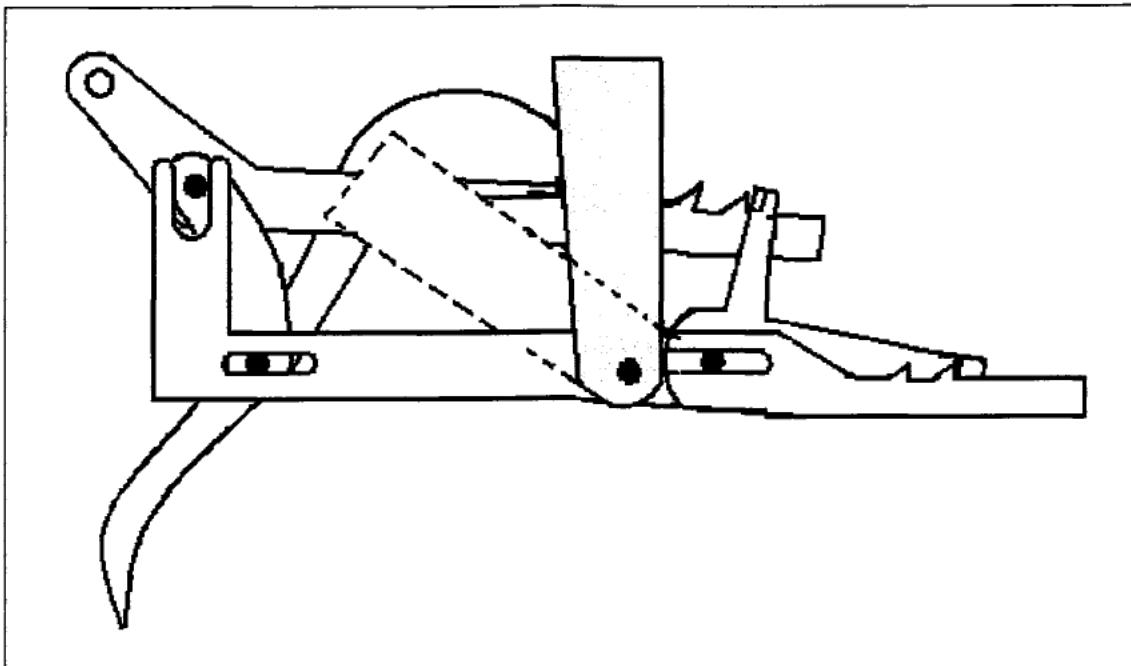


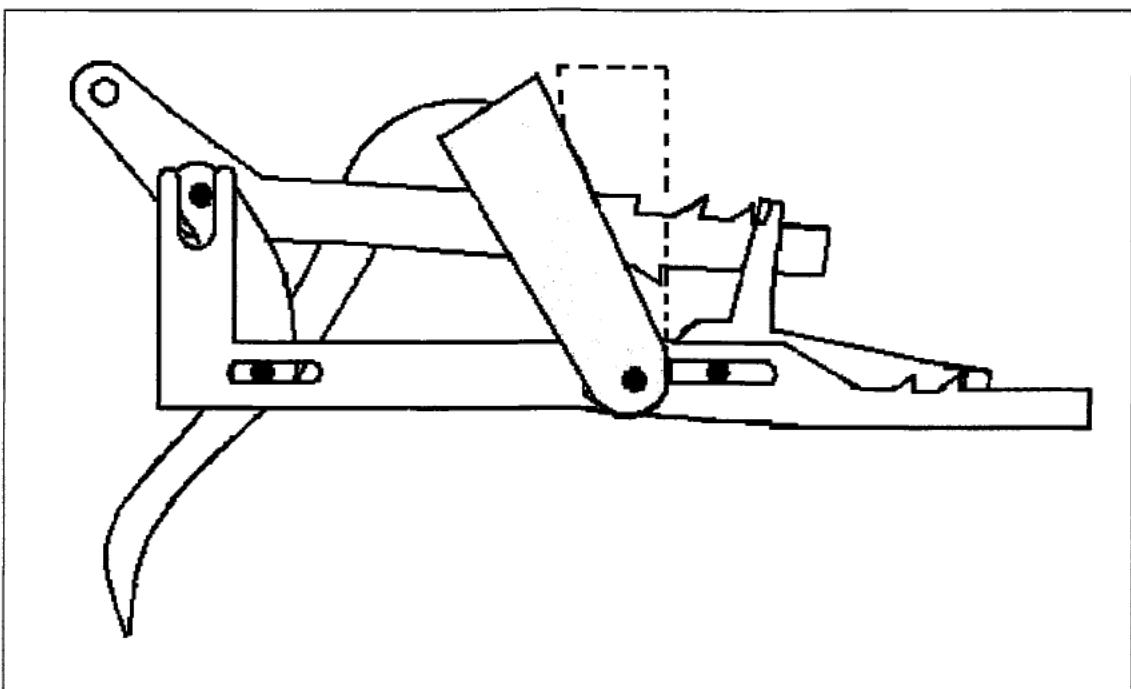
Figure 9 – Incremental Trigger, Trigger Pulled

Once the sear releases the trigger, the hammer swings up to discharge the round in the chamber in the same manner as the generic semi-automatic trigger, as shown in Figure 10.



**Figure 10 – Incremental Trigger, Hammer Rotates After Sear Release**

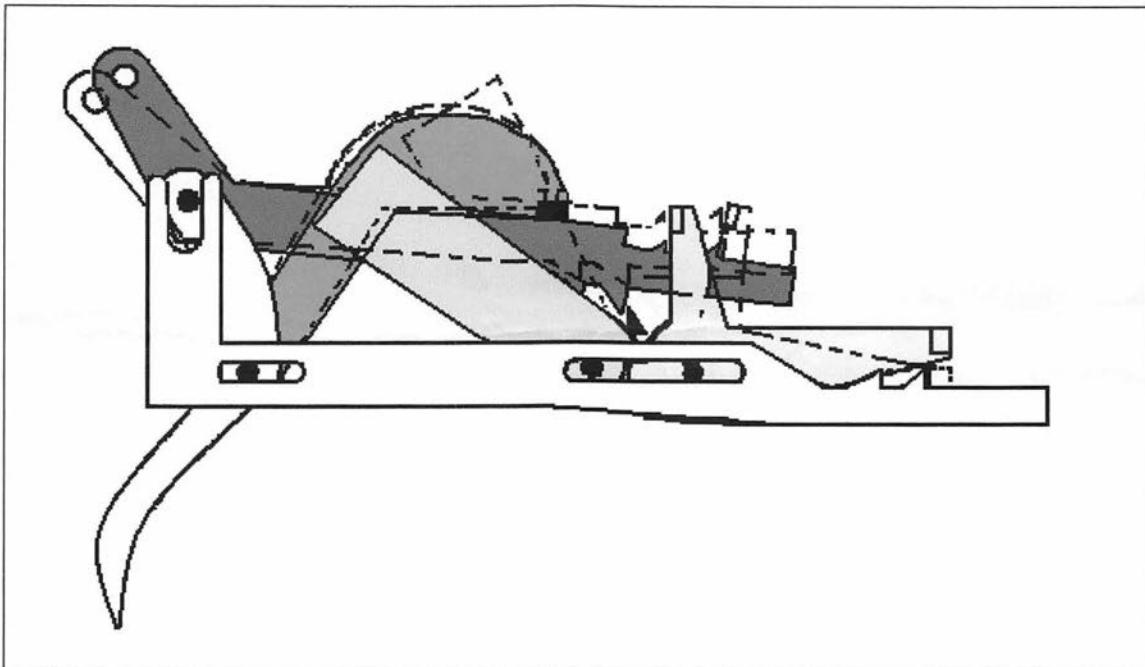
Figure 11 shows the hammer being pushed back by the bolt as it recoils from being discharged, similar to the generic semi-automatic trigger. In addition, the lug on the second arm of the sear is still engaging the notch in the trigger stop, holding the trigger, blocking any further rearward movement.



**Figure 11 – Incremental Trigger, Hammer Pushed Back By Bolt**

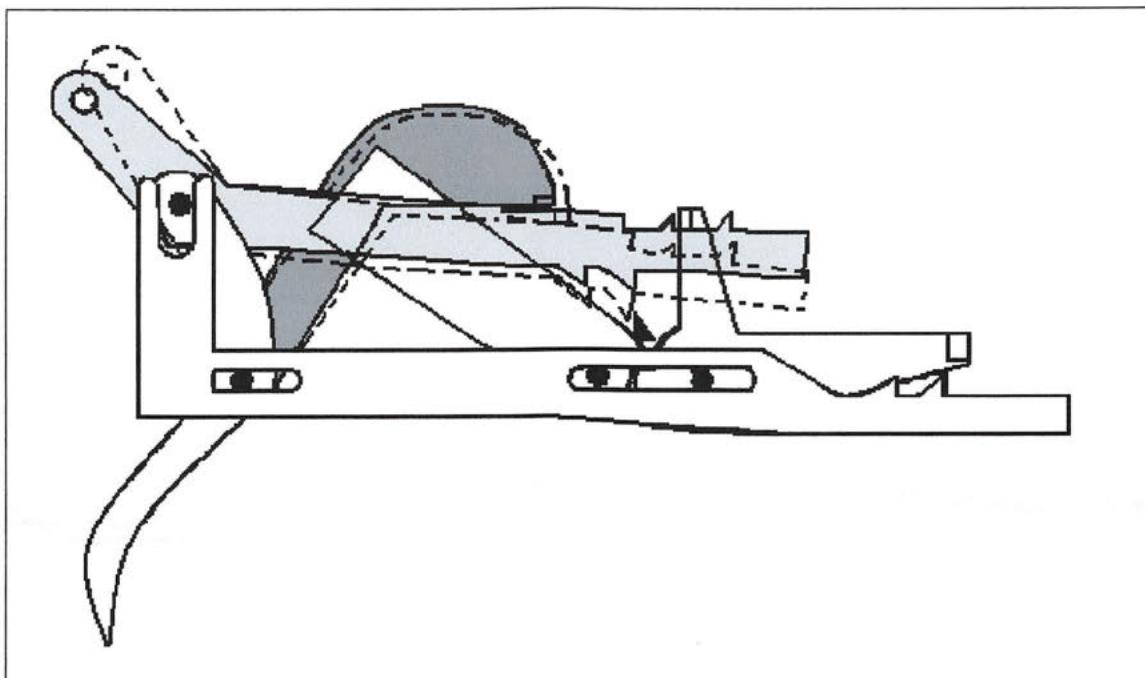
As the bolt continues back, it continues moving the hammer back to its cocked position and also pushes the disconnector down, which in turn pushes the trigger bar down. When the trigger bar is

pushed down far enough, it released the sear in the same manner as the generic semi-automatic trigger and the sear engages the hammer to hold it in the cocked position. Additionally in the incremental trigger the trigger bar engages the trigger bar stop just before the lug on the forward arm of the sear releases the trigger stop, as shown in Figure 12. The trigger at this point is held from moving by the trigger bar stop.



**Figure 12 – Incremental Trigger, Bolt Actuates Disconnector and Trigger Bar Stop Engaged**

Figure 13 shows the disconnector moving back up as the bolt moves to the closed position in much the same way a generic semi-automatic trigger works. The trigger bar also moves up, being released from the trigger bar stop and a notch then engages the sear and the trigger is once again ready to discharge the firearm by pulling the trigger farther backward, or the trigger can be released to totally reset the trigger mechanism, allowing it to return to its original position.



**Figure 13 – Incremental Trigger, Disconnector & Trigger Bar Reset When Bolt Closed**

Per this description, I believe the incremental trigger system described should be considered a semi-automatic type trigger system since it requires the person discharging the firearm to move the trigger a specific amount for every round fired and no trigger movement is allowed between the time the sear releases the hammer and the bolt closes.

Please advise me on the legality of the trigger system described and any specific test requirements it must pass to be determined a legal semi-automatic type trigger system.

Thank you for your time and consideration.

Sincerely,

[Redacted signature area]

DEPARTMENT OF THE TREASURY  
BUREAU OF ALCOHOL, TOBACCO AND FIREARMS  
CORRESPONDENCE APPROVAL AND CLEARANCE

903050:RV  
3311/2005-372

[REDACTED]

Dear [REDACTED]:

This refers to your letter, including illustrations, dated March 21, 2005, to the Firearms Technology Branch (FTB), Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). In your correspondence, you request evaluation of a new firearm trigger design that you are considering for production. Of special importance in this regard is a determination from FTB regarding whether installation of this trigger device in a firearm would result in the manufacture of a machinegun. The diagrams you have included describe the function of a both a generic trigger and your device, which you call an "incremental trigger."

For your information, 26 U.S.C. Section 5845(b), defines "machinegun" as follows:

*...any weapon which shoots, is designed to shoot, or can be readily restored to shoot, automatically more than one shot without manual reloading with a single function of the trigger. The term shall also include the frame or receiver of any such weapon, any part designed and intended solely and exclusively, or combination of parts from which a machinegun can be assembled if such parts are in possession or under control of a person.*

Thus, if a firearm continues to fire when you pull the trigger, it would be a "machinegun" as defined. If it is a trigger that causes the firearm to fire in stages, the device may not qualify as a machinegun.

The FTB review of your correspondence found your final paragraph describing the incremental trigger assembly presented in Figure 13 somewhat unclear. You state that Figure 13 "shows the disconnector moving back up as the bolt moves to the closed position in much the same way as a generic trigger works. The trigger bar also moves up, being released from the trigger stop and a notch engages the sear and the trigger is once again ready to discharge the firearm by pulling the trigger farther backward, or the trigger can be released to totally reset the trigger mechanism allowing it to return to its original position." This description appears to indicate that the firearm would fire in stages and as such would not be a machinegun.

INITIATOR	REVIEWER	REVIEWER	REVIEWER	REVIEWER	REVIEWER	REVIEWER
CODE 903050	903050	903050	903050			
SURNAME Nixon		U.S. GOVERNMENT	NIXON			
DATE 4-27-05	4-29-05	4-29-05	4/29/05		ATF 0587	

## CORRESPONDENCE APPROVAL AND CLEARANCE

Our Branch cannot render a final disposition regarding your trigger device based solely on your written description. Further, we cannot authorize you to make a machinegun. However, you may submit a prototype to FTB for assembly into a firearm and for further evaluation with respect to its classification under Federal statutes.

Please note that if the FTB examination were to determine that the device constitutes a machinegun, it could not be returned.

We trust that the foregoing has been responsive to your inquiry. If you have further questions concerning this matter, please contact us.

Sincerely yours,

Sterling Nixon  
Chief, Firearms Technology Branch

CODE	INITIATOR	REVIEWER	REVIEWER	REVIEWER	REVIEWER	REVIEWER	REVIEWER
SURNAME							
DATE							ATF 0588



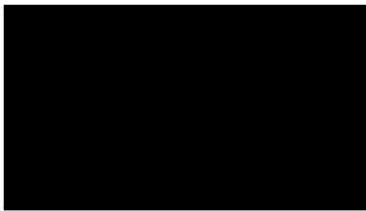
**U.S. Department of Justice**

Bureau of Alcohol, Tobacco,  
Firearms and Explosives

AUG 29 2005

903050:RDC  
3311/2005-561

[www.atf.gov](http://www.atf.gov)



Dear [REDACTED]:

This refers to your letter of July 16, 2005, to the Firearms Technology Branch (FTB), Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), regarding the classification of a submitted Ruger, Model 10/22; .22 caliber semiautomatic rifle; serial number 121-56665; with installed [REDACTED] device.

As you are aware, the **National Firearms Act (NFA)**, **26 U.S.C. § 5845(b)**, defines the term **“machinegun”** as follows:

*...any weapon which shoots, is designed to shoot, or can be readily restored to shoot, automatically more than one shot, without manual reloading, by a single function of the trigger. This term shall also include the frame or receiver of any such weapon, any part designed and intended solely and exclusively, or combination of parts designed and intended, for use in converting a weapon into a machinegun, and any combination of parts from which a machinegun can be assembled if such parts are in the possession or under the control of a person.*

Examination of the submitted firearm by FTB revealed that it had been modified by the installation of a replacement trigger and sear mechanism. The trigger is approximately 1.993 inches (51mm) in height, having a raised shoulder on the right side. Further, an angled cut is present on the forward edge of this shoulder. The sear mechanism has been made from a folded and formed piece of metal approximately .675 inch (17mm) x .310 inch (8mm) x .444 inch (11.5mm). It is secured within the trigger group by the magazine latch/ejector pivot pin. A wire spring (looped around the hammer crosspin) applies vertical pressure to the sear. Also, a metal pin approximately .437 inch (11mm) x .128 inch (3mm) has been installed through the top area of the hammer. The purpose of this pin was not determined.

-2-

[REDACTED]

The FTB evaluation found that after the hammer is cocked and the trigger is pulled, the hammer is held in the cocked position by the tail of the sear resting against the angled cut in the raised shoulder of the trigger. The forward end of the sear is pivoted downward by the bolt as it moves forward. This pivoting motion, in turn, raises the tail of the sear out of the angled cut of the trigger. The trigger is then allowed to move sufficiently to release the hammer.

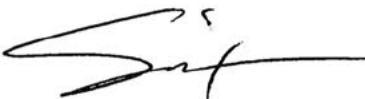
The redesigned function of the submitted Ruger 10/22 is atypical of conventional semiautomatic fire. However, because of the sear-released hammer, its design remains similar to that of a basic machinegun. To determine its functionality, FTB conducted a test-fire of the Ruger. During this testing, the firearm repeatedly malfunctioned. After the initial round of ammunition was discharged, the next round was chambered but failed to fire, even though the hammer had been released. Examination of the unfired cartridge revealed that the base of the cartridge had not been contacted by the firing pin.

Based upon this examination and test firing, FTB's findings were inconclusive. Therefore, we cannot at this time render a determination regarding the classification of the submitted Ruger 10/22 rifle. However, were a fully functioning model resubmitted, our Branch would undertake a further evaluation.

This rifle will be returned to you under separate cover. Please provide this office with a billable FedEx (or similar) account number in order that we may return the firearm to you.

We regret the lack of a definitive finding at this time, but trust the foregoing was responsive to your request for an evaluation.

Sincerely yours,



Sterling Nixon  
Chief, Firearms Technology Branch

EBI

RDC

Mr. Sterling Nixon  
BATF Tech Branch  
244 Needy Road  
Martinsburg, WV 25401

July 16, 2005

2005-561-1 PDC

Dear Mr. Nixon,

Enclosed is a Ruger Model 10-22 Serial Number 121-56665 I am submitting on behalf of [REDACTED]. This gun is fitted with a trigger modification which may allow the gun to fire faster but still in the semi auto mode. I tend to agree in that the trigger must be pulled for each shot.

[REDACTED] is requesting a ruling from your office that this device does not change the semi automatic classification of this gun.

Please return the gun to [REDACTED] when your tests are complete.

Thank you for your consideration,

[REDACTED]

[REDACTED]

July 7, 2005

Sterling Nixon - Chief, Firearms Technology Branch  
Bureau of Alcohol, Tobacco, Firearms and Explosives  
Firearms Technology Branch  
244 Needy Road  
Martinsburg, WV 25401

Dear Mr. Nixon:

Thank you for your timely response to the letter I sent on March 21, 2005 to the Firearms Technology Branch (FTB), Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) regarding my "Incremental Trigger". The information you sent was very helpful, and I plan to submit an example to you of that trigger system for your testing, however, currently I do not have adequate machine tools to fabricate most of the components. While working to build a prototype and discovering I currently did not have the proper resources, I however discovered a different way to produce a trigger system that will produce similar results for rapid follow-up shots in a semi-automatic firearm.

Accompanying this letter is a Ruger Model 10-22 Carbine, serial number: 121-56665. Installed in this rifle are three custom components, which comprise my new trigger design, a "Resetting Trigger, Semi-Automatic Trigger". The components are:

1. A trigger, with a reset actuation lug.
2. A trigger stop.
3. A custom spring that activates the trigger stop and the bolt lock.

In addition to these three components, the original hammer was modified. A pin was added, that protrudes from the right side.

To make sure I was not in violation of any firearm possession or manufacturing laws, I had the trigger stop fitted, hardened, and installed, and the rifle shipped by [REDACTED], since they have a Title II, manufacturing license.

The Resetting Trigger, Semi-Automatic Trigger is a simple evolution of the standard semi-automatic trigger. It adds two additional functions to the trigger operation. First of all it adds a powered actuation to the trigger, to return it to its starting position. Second, the trigger stop holds the trigger in the starting position until the bolt has closed to the point it is safe to again pull the trigger and discharge the firearm.

Figure 1 shows the main components (without the springs) of the Resetting Trigger, Semi-Automatic Trigger, as they are installed in the example Ruger 10/22. The original sear and disconnector are installed in the new actuation lug trigger

● Page 2

July 7, 2005

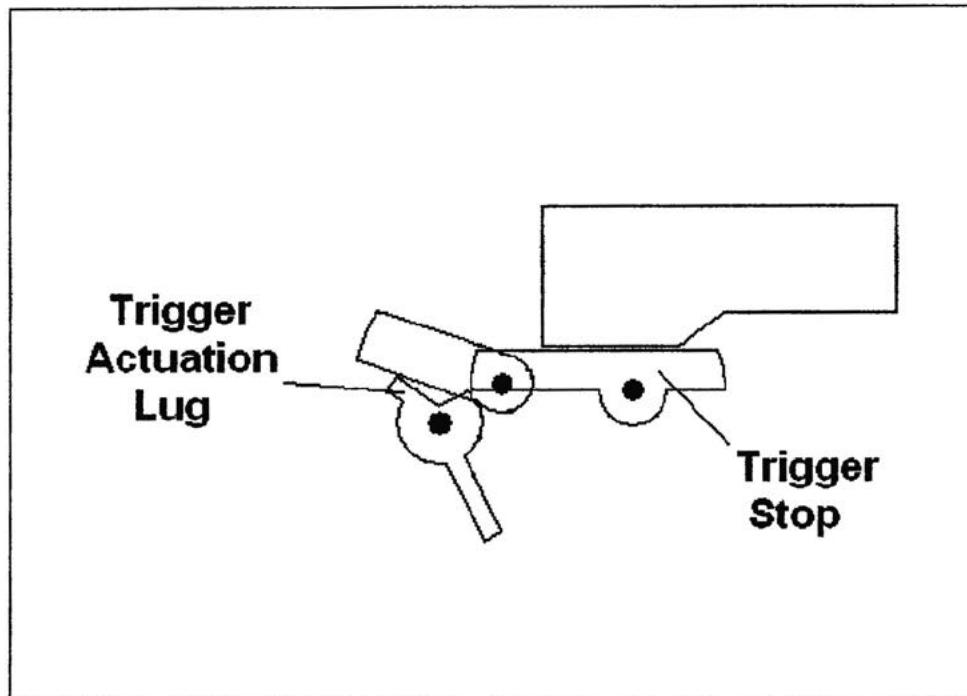


Figure 1

The Resetting Trigger, Semi-Automatic Trigger functions as any normal semi-automatic trigger. When the trigger is pulled, the hammer is released so it strikes the firing pin in the bolt, discharging the firearm, as shown in Figure 2.

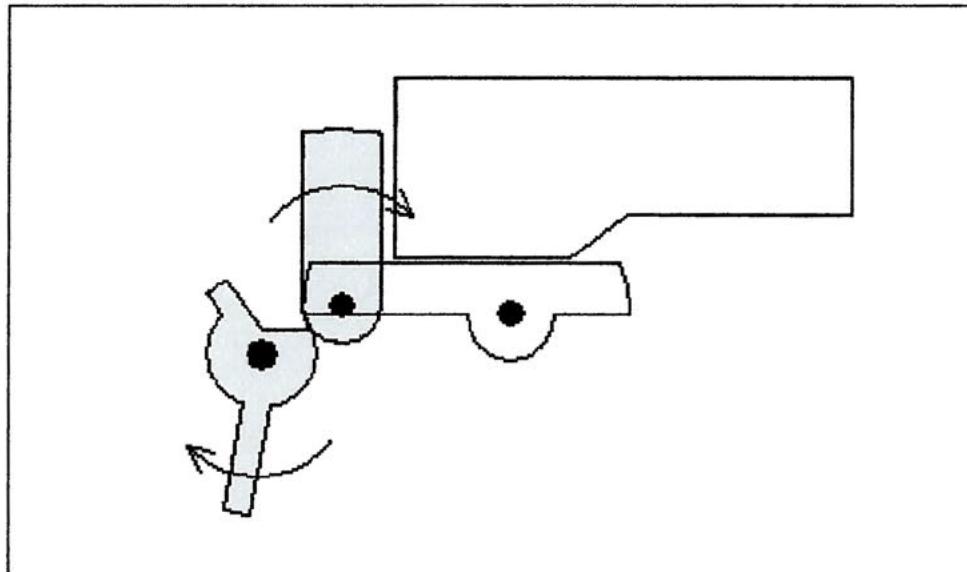
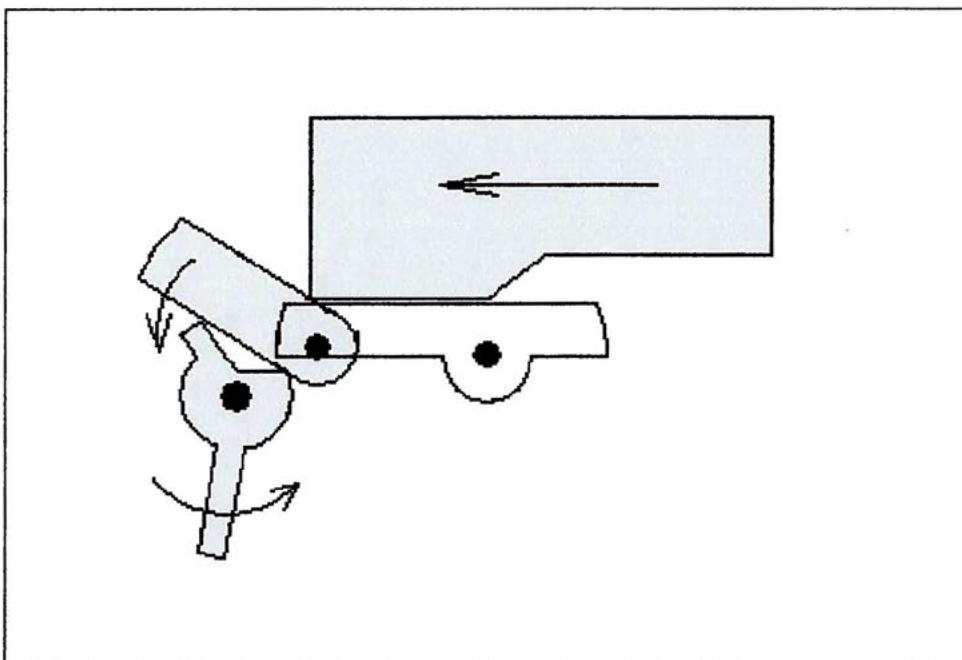


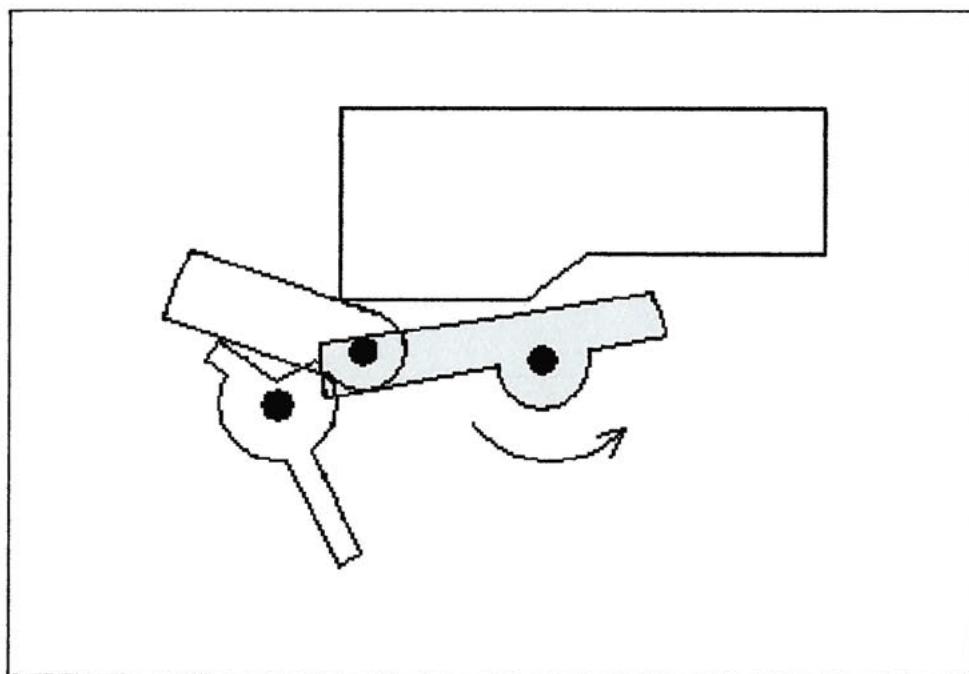
Figure 2

As the bolt recoils, it pushes the hammer back as in a normal semi-automatic trigger mechanism, until the sear can engage the hammer. At this point, the bolt also engages the trigger actuation lug, through the hammer, and pushes the trigger forward toward its "ready to fire" position, as shown in Figure 3.



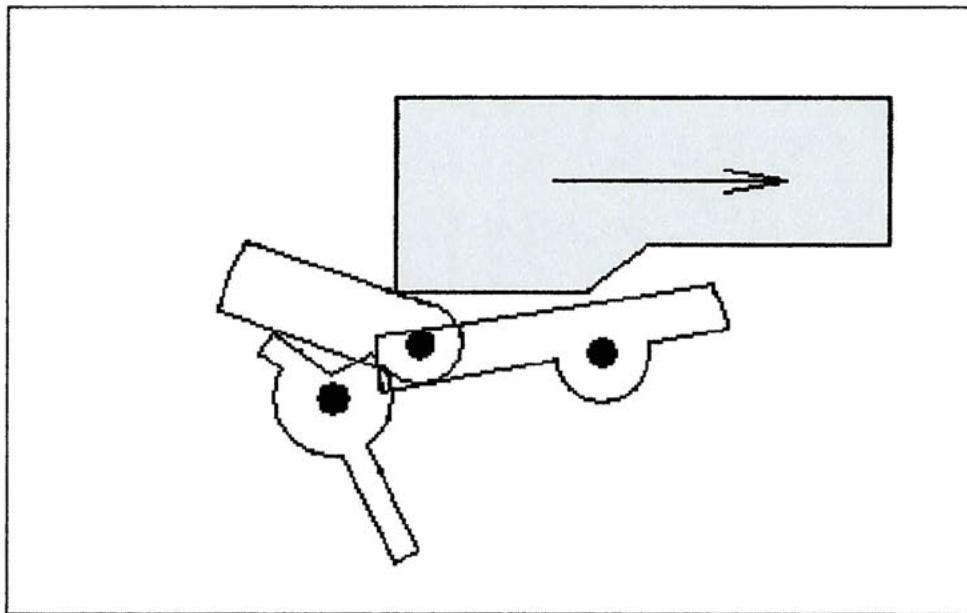
**Figure 3**

When the trigger reaches its "ready to fire" position, through interaction with the bolt, the trigger stop rotates down, to stop any rearward motion of the trigger, as shown in Figure 4. It should also be noted, that as the trigger moved into the "ready to fire" position, the original disconnector re-establishes the connection between the trigger and sear.



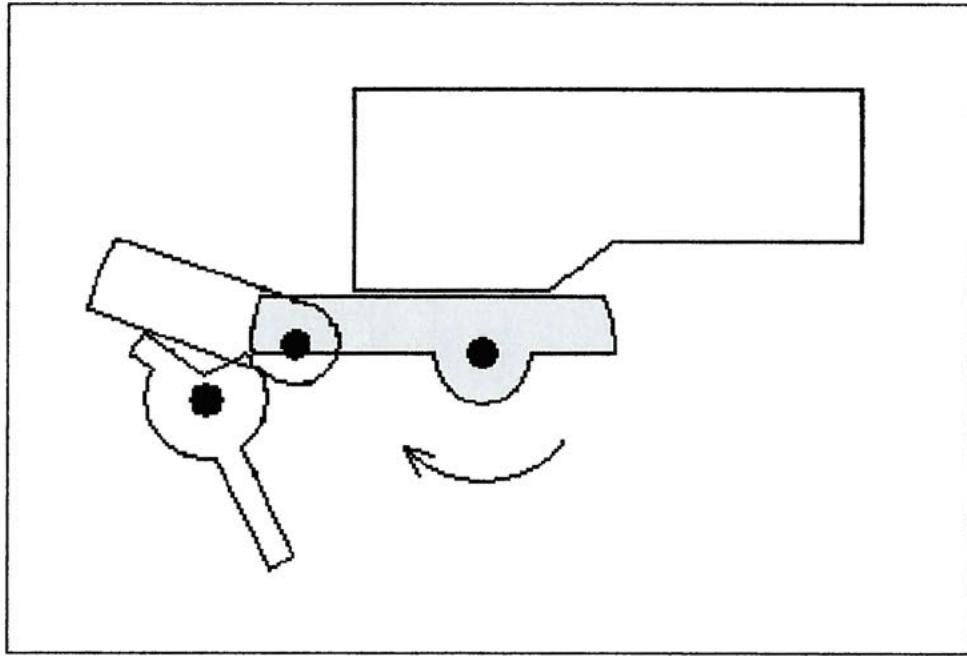
**Figure 4**

After the bolt has concluded its rearward travel, it begins to move forward. Once it reaches a certain point, it releases the hammer, to be held in position only by the sear, as shown in Figure 5.



**Figure 5**

As the bolt closes, it moves the bolt stop out of engagement with the trigger, as shown in Figure 6.



**Figure 6**

The trigger is now ready to allow the firearm to be discharged if it is pulled back.

● Page 5

July 7, 2005

Because this system requires the trigger to be pulled for each and every discharge of the firearm I believe it to be a "semi-automatic" trigger. Is this also your conclusion?

If I develop the same type of trigger system for another model of firearm, will FTB also need to review the new installation, or is this test and determination adequate for the system?

Would making slight modifications to the components, but not their function require an additional review? I was thinking of adding a roller to the hammer so the bolt/hammer interaction would be smoother, and possibly a roller to the bolt, so the bolt/ trigger stop interaction is improved.

Upon completion of your testing, if you determine the Resetting Trigger, Semi-Automatic Trigger to be a "semi-automatic" trigger system, can you ship my rifle back to me at my [REDACTED] home address? Though I do not have a Federal Firearms License (FFL), I have read that the owner of a firearm can have that firearm shipped to himself/herself, if it is their personal property. This would save me a 340 mile round trip to [REDACTED] and back to pick up my rifle. If this is not the case, please ship the rifle back to:

[REDACTED]

I will pick up my rifle there.

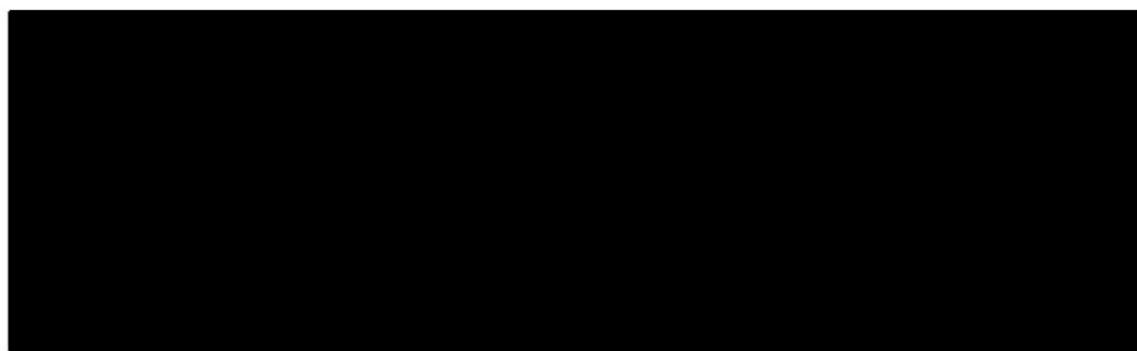
Also, if you determine the Resetting Trigger, Semi-Automatic Trigger is not a "semi-automatic" and is instead a "machinegun", please remove the trigger stop and the lugged trigger and keep and dispose of these two components as appropriate. I do not want my rifle to be classified as a machinegun. In this case please return the rifle without the trigger stop and lugged trigger. I would appreciate if you would remove the pins, sear and disconnector from the lugged trigger and return them with the rifle, as I have the original trigger, and this would allow me to return the rifle to its original configuration.

I am looking forward to finding what your determination will be. I hope you can conclude your testing and review by the end of August if possible. I have a business trip planned in the first part of September, and your determination will affect that trip.

Thank you for your time and consideration.

Sincerely,

[REDACTED]



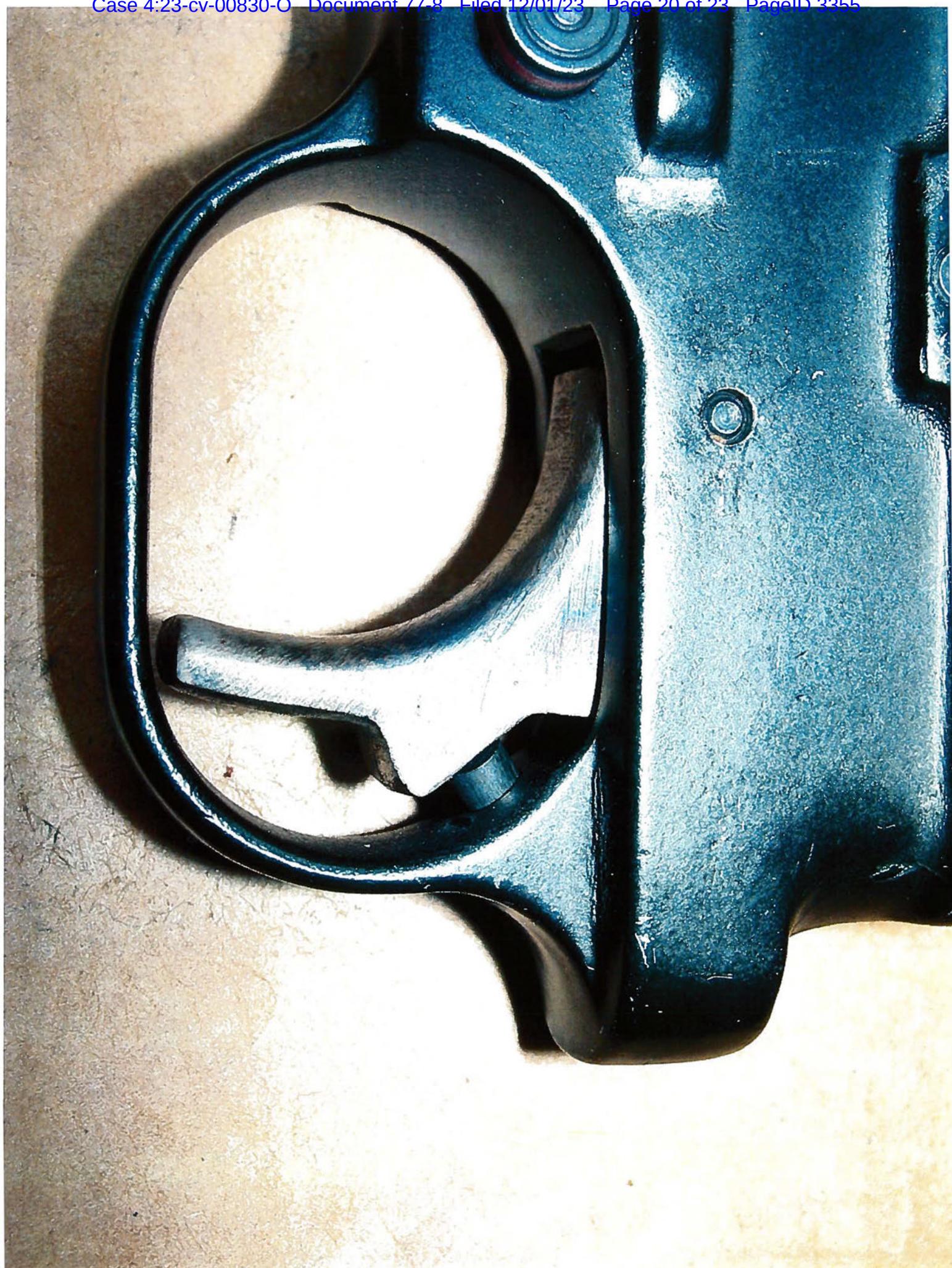
**Ruger 10/22  
Conversion**

**Submitted by** 

WESTCOTT®



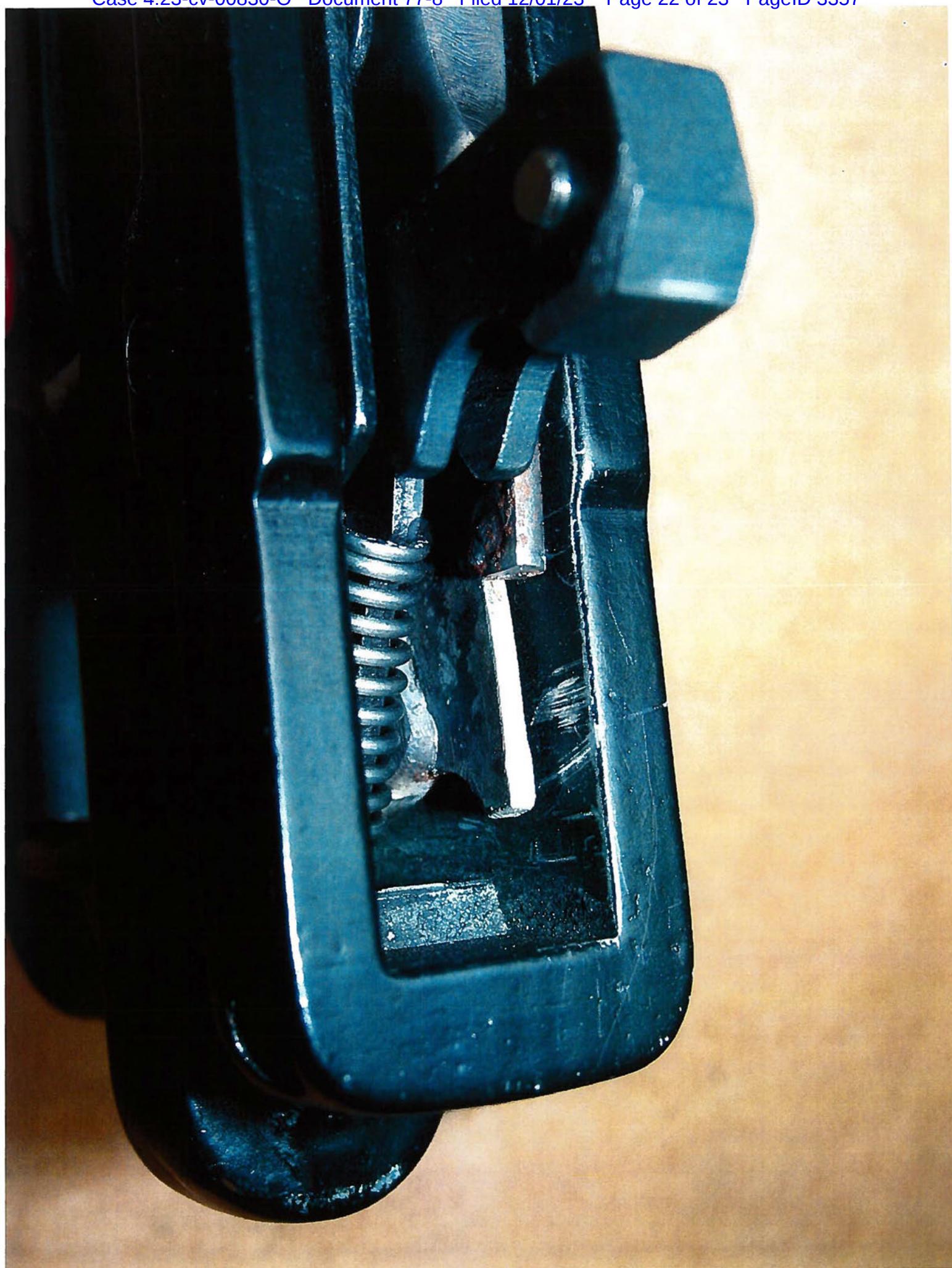
ATF 0598



ATF 0599



ATF 0600



ATF 0601



ATF 0602